JOURNAL OF
Inorganic Biochemistry

Volume 66, Number 1, April 1997

Contents

I. MAYER, R. SCHLAM (Jerusalem, Israel), and J. D. B. FEATHERSTONE (San Francisco, California, USA)
Magnesium-Containing Carbonate Apatites 1

MARIA C. RODRIGUEZ-ARGÜELLES (Vigo, Spain), MARISA BELICCHI FERRARI, GIOVANNA GASPARRI FAVA, CORRADO PELIZZI, GIORGIO PELOSI, ROBERTO ALBERTINI, ANTONIO BONATI, PIER PAOLO DALL'AGLIO, PAOLO LUNGHI, and SILVANA PINELLI (Parma, Italy)
Acenaphthenequinone Thiosemicarbazone and Its Transition Metal Complexes: Synthesis, Structure, and Biological Activity 7

ELŻBIETA CHRUŚCIŃSKA (Łódź, Poland), MARCIN DYBA (Wrocław, Poland), GIOVANNI MICERA (Sassari, Italy), WOJCIECH AMBROZIAK, JACEK OLCZAK, JANUSZ ZABROCKI (Łódź, Poland), and HENRYK KOZŁOWSKI (Wrocław, Poland)
Binding Ability of Cu^{2+} Ions by Opiate-Like Fragments of Bovine Casein 19

F. BARCELÓ, F. MIRALLES, and C. OTERO AREÁN (Palma de Mallorca, Spain)
Purification and Characterization of Ferritin from Alfalfa Seeds 23

M. S. DÍAZ-CRUZ, J. MENDIETA, R. TAULER, and M. ESTEBAN (Barcelona, Spain)
Cadmium-Binding Properties of Glutathione: A Chemometrical Analysis of Voltammetric Data 29

RAJIV P. BANDWAR, CHEBROLU P. RAO (Mumbai, India), MERCEDES GIRALT, JUAN HIDALGO (Barcelona, Spain), and G. U. KULKARNI (Bangalore, India)
Transition-Metal Saccharide Chemistry and Biology: Saccharide Complexes of Cu(II) and Their Effect on *In Vivo* Metallothionein Synthesis in Mice 37

TERESA KOWALIK-JANKOWSKA (Wrocław, Poland), MAREK JASIONOWSKI, LESZEK ŁANKIEWICZ (Gdańsk, Poland), and HENRYK KOZŁOWSKI (Wrocław, Poland)
Specific Binding of Cu^{2+} and Ni^{2+} Ions by Thioamide Analogs of Tetraalanine 45

PIETRO CIANCAGLINI, JOÃO MARTINS PIZAURO, and FRANCISCO ASSIS LEONE (São Paulo, Brasil)
Dependence of Divalent Metal Ions on Phosphotransferase Activity of Osseous Plate Alkaline Phosphatase 51

Volume 66, Number 2, May 1, 1997

Contents

IZTOK TUREL, IVAN LEBAN (Ljubljana, Slovenia), GERD KLINTSCHAR (Graz, Austria), NATAŠA BUKOVEC (Ljubljana, Slovenia), and STANE ZALAR (Novo mesto, Slovenia)
Synthesis, Crystal Structure, and Characterization of Two Metal–Quinolone Compounds 77

JOSEPH J. STEPHANOS (Shebin El-Kom, Egypt), SCOTT A. FARINA, and ANTHONY W. ADDISON (Philadelphia, Pennsylvania, USA)
Triangular Kinetic Schemes Applied to the Stability of a Heme–Globin Complex 83

LISA M. LANDINO and TIMOTHY L. MACDONALD (Charlottesville, Virginia, USA)
Inhibition of the GDP/GTP Exchange Reaction of *ras* p21 by Aluminum Ion 99

PAOLA CALAMAI, STEFANIA CAROTTI, ANNALISA GUERRI, LUIGI MESSORI, ENRICO MINI, PIERLUIGI ORIOLI, and GIAN PAOLO SPERONI (Florence, Italy)
Biological Properties of Two Gold(III) Complexes: $AuCl_3$(Hpm) and $AuCl_2$(pm) 103

CALVIN D. TORMANEN (Mt. Pleasant, Michigan, USA)
The Effect of Metal Ions on Arginase from the Zebra Mussel *Driessena polymorpha* 111

C. LEIGH BROADHURST, WALTER F. SCHMIDT, JAMES B. REEVES III, MARILYN M. POLANSKY (Beltsville, Maryland, USA), KURT GAUTSCHI (Zurich, Switzerland), and RICHARD A. ANDERSON (Beltsville, Maryland, USA)
Characterization and Structure by NMR and FTIR Spectroscopy, and Molecular Modeling of Chromium(III) Picolinate and Nicotinate Complexes Utilized for Nutritional Supplementation 119

MAKOTO CHIKIRA, MOTOI INOUE, RYOICHI NAGANE, WATARU HARADA, and HEISABURO SHINDO (Tokyo, Japan)
How Amino Acids Control the Binding of Cu(II) Ions to DNA (II): Effect of Basic Amino Acid Residues and the Chirality on the Orientation of the Complexes 131

GUANG YANG, JIAN ZHONG WU, LEI WANG, LIANG NIAN JI (Guangzhou, P.R. China), and XUAN TIAN (Lanzhou, P.R. China)
Study of the Interaction between Novel Ruthenium(II)–Polypyridyl Complexes and Calf Thymus DNA 141

G. BLAUER and M. AKKAWI (Jerusalem, Israel)
Investigations of B- and β-Hematin 145

Volume 66, Number 3, May 15, 1997

Contents

RAMESH CHANDRA, RITU ANEJA, and ARCHANA SHARMA (Delhi, India)
Synergistic Effect of Retinoic Acid on Sn–PP Mediated Suppression of Heme Oxygenase Activity *in vivo* in Rats **153**

WEIQING ZHONG, QI ZHANG, YUAN YAN, SHENG YUE (Nanjing, P.R. China), BAOLIN ZHANG (Beijing, P.R. China), and WENXIA TANG (Nanjing, P.R. China)
Interaction of Sodium Chloroplatinate and Iproplatin with Metallothionein *in vivo* **159**

SANDRA L. JEWETT, SUE EGGLING, and LOUIS GELLER (Northridge, California, USA)
Novel Method to Examine the Formation of Unstable 2:1 and 3:1 Complexes of Catecholamines and Iron(III) **165**

S. GANGOPADHYAY (Calcutta, India) and P. K. GANGOPADHYAY (West Bengal, India)
Adenine and Adenosine Derivatives of Tetraacetatodiruthenium (II,III) Cation **175**

WEIQING ZHONG, QI ZHANG, YUAN YAN, SHENG YUE (Nanjing, P.R. China), BAOLIN ZHANG (Beijing, P.R. China), and WENXIA TANG (Nanjing, P.R. China)
Reaction of a Platinum(IV) Complex with Native Cd, Zn–Metallothionein *in vitro* **179**

LILIANNA TRYNDA-LEMIESZ and FLORIAN P. PRUCHNIK (Wrocław, Poland)
Studies on the Interaction between Human Serum Albumin and $[RH_2(OAc)_2(bpy)_2(H_2O)_2](OAc)_2$ **187**

TERESA KOWALIK-JANKOWSKA (Wrocław, Poland), MARCIN STASIAK, MIROSŁAW T. LEPLAWY (Łódź, Poland), and HENRYK KOZŁOWSKI (Wrocław, Poland)
Effect of α-Hydroxymethylserine Residue on Binding Ability of Oligopeptides to Cu^{2+} Ions **193**

M. NASEEM AKHTAR, ANVARHUSEIN A. ISAB, and ABDUL RAHMAN AL-ARFAJ (Dhahran, Saudi Arabia)
^{13}C and ^{15}N NMR Studies of the Interaction of Gold(I) Captopril with Selenocyanate, Selenourea, and Thiourea in Aqueous Solution **197**

JAUME TORRES, NATHAN DAVIES (Essex, United Kingdom), VICTOR M. DARLEY-USMAR (Birmingham, Alabama, USA), and MICHAEL T. WILSON (Essex, United Kingdom)
The Inhibition of Cytochrome *c* Oxidase by Nitric Oxide Using S-Nitrosoglutathione **207**

Volume 66, Number 4, June 1997

Contents

ROBERTO CAO, NADINA TRAVIESO, ALEX FRAGOSO, REYNALDO VILLALONGA, ALICIA DIAZ, MIGUEL E. MARTINEZ, JESUS ALPIZAR (Havana, Cuba), and DOUGLAS X. WEST (Normal, Illinois, USA)
Determination of SOD-Like Activity of Copper(II) Complexes with α-Amino Acid Dithiocarbamates 213

HUILAN CHEN, HONG YAN, LAIBIN LUO, XIAOXIA CUI, and WENXIA TANG (Nanjing, P.R. China)
Study of the Thermal Decomposition Axial-Base Equilibrium, and Co–C Bond Dissociation Energy of 2′,5′-Dideoxyadenosylcobalamin in Ethylene Glycol 219

MARCANTONIO BRAGADIN and ELENA ROSA VIOLA (Venice, Italy)
Ni^{++} as a Competitive Inhibitor of Calcium Transport in Mitochondria 227

ANTHONY PRESTA and MARTIN J. STILLMAN (London, Ontario, Canada)
Incorporation of Copper into the Yeast *Saccharomyces cerevisiae*. Identification of Cu(I)-Metallothionein in Intact Yeast Cells 231

IZTOK TUREL, IVAN LEBAN, and NATAŠA BUKOVEC (Ljubljana, Slovenia)
Crystal Structure and Characterization of the Bismuth(III) Compound with Quinolone Family Member (Ciprofloxacin). Antibacterial Study 241

JONATHAN P. ADJIMANI (Legon, Accra, Ghana) and ETHEL OWUSU (Corvallis, Oregon, USA)
Nonenzymatic NADH/FMN-Dependent Reduction of Ferric Siderophores 247

SHOHREH NAFISSI, HOSSEIN AGHABOZORGH, and S. A. SEYED SADJADI (Tehran, Iran)
Interaction of Tl^{+} with Mononucleotides: Metal Ion Binding and Sugar Conformation 253

A. BIGI, E. FORESTI, M. GANDOLFI, M. GAZZANO, and N. ROVERI (Bologna, Italy)
Isomorphous Substitutions in β-Tricalcium Phosphate: The Different Effects of Zinc and Strontium 259

KIMBERLEY A. WALDRON (Denver, Colorado, USA) and JOSEPH TOPICH (Richmond, Virginia, USA)
Electrochemical and Spectroscopic Studies of a Molybdenum Cofactor Model in Aqueous Micellar Solution 267

Author Index 273

Subject Index 275